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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/980,024	05/28/2002	Noriyuki Honda	9792486-0111	3010

7590 06/16/2004  
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EXAMINER

HARRISON, MONICA D

ART UNIT PAPER NUMBER

2829

DATE MAILED: 06/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application N .	Applicant(s)	
	09/980,024	HONDA ET AL.	
	Examiner	Art Unit	
	Monica D. Harrison	2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 May 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____.  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____.   | 6) <input type="checkbox"/> Other: ____.                                    |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Omoya et al (5,641,996).

1. Regarding claim 1, Omoya et al discloses an electrical connection material for electrically connecting an electrical connection portion of a first object and an electrical connection portion of a second object, characterized in that the electrical connection material comprises a first film-like adhesive layer which is a film-like adhesive layer arranged on said first object and is composed of a plurality of conductive particles, a first binder containing the conductive particles, and a first filler (Figure 2, reference 4; column 9, lines 14-17; column 10, lines 64-67 thru column 11, lines 1-13) and a second film-like adhesive layer which is arranged on said first film-like adhesive layer and is composed of a second binder whose viscosity is lower than that of said first binder and a second filler (Figure 2, reference 7; column 9, lines 21-26; column 10, lines 51-56; and column 11, lines 14-40).

2. Regarding claim 2, Omoya et al discloses said conductive particles have an approximately uniform particle diameter (column 11, lines 11-12; lines 46-58).

3. Regarding claim 3, Omoya et al discloses the material of said second film-like adhesive layer composed of said second binder and said second filler is a binder having the same

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material as that of or a material similar to said first binder of said first film-like adhesive layer containing said conductive particles (Figure 2, reference 4 "*epoxy resin*"; column 10, lines 64-67 thru column 11, lines 1-13 and Figure 2, reference 7 "*resin binder*"; column 11, lines 14-26).

4. Regarding claim 4, Omoya et al discloses the viscosity of said second film-like adhesive layer becomes extremely lower than the viscosity of said first film-like adhesive layer in a heating process (column 10, lines 17-28).

5. Regarding claim 5, Omoya et al discloses that the thickness of said first film-like adhesive layer containing said conductive particles is set to from approximately the same thickness as the diameter of said conductive particles up to 4 times the diameter (column 11, lines 46-58).

6. Regarding claim 6, Omoya et al discloses in order that the viscosity of said second film-like adhesive layer composed of said second binder and said second filler is set to a value lower than the viscosity of said first film-like adhesive layer containing said conductive particles, the diameter of said second filler particles is set to a value larger than the diameter of said first filler particles (column 11, lines 10-13).

7. Regarding claim 7, Omoya et al discloses in order that the viscosity of said second film-like adhesive layer composed of said second binder and said second filler is set to a value lower than the viscosity of said first film-like adhesive layer containing said conductive particles, the content by amount of said second filler is set to a value smaller than the content of said first filler (column 4, lines 14-32).

8. Regarding claim 8, Omoya et al discloses said first filler and said second filler are materials reducing the coefficient of water absorption and the coefficient of linear expansion of a binder (column 4, lines 59-64; column 6, lines 14-17; column 7, lines 52-57).

9. Regarding claim 9, Omoya et al discloses the electrical connection portion of said first object is a wiring pattern on a circuit substrate, the electrical connection portion of said second object is protrusion electrode of an electrical component, and said conductive particles electrically connect the wiring pattern on said circuit substrate and the protrusion electrode of said electrical component (column 9, lines 52-57; Figure 3, reference 14; Figure 2, references 2 and 3).

10. Regarding claim 10, Omoya et al discloses the elements of said first binder containing said conductive particles and said second binder of second film-like adhesive layer are the same or approximately similar (Figure 2, reference 4 "*epoxy resin*"; column 10, lines 64-67 thru column 11, lines 1-13 and Figure 2, reference 7 "*resin binder*"; column 11, lines 14-26).

11. Regarding claim 11, Omoya et al discloses an electrical connection material comprising a first film-like adhesive layer which is a film-like adhesive layer composed of a first binder and a first filler (Figure 2, reference 4) and a second film-like adhesive layer which is composed of a second binder and a second filler and is arranged on said first film-like adhesive layer, characterized in that said first binder is made of a first high molecular resin material and said second binder is made of a second high molecular resin material whose molecular weight is smaller than that of said first high molecular resin material (column 11, lines 47-58).

12. Regarding claim 12, Omoya et al discloses electrical connection method for electrically connecting an electrical connection portion of a first object and an electrical

connection portion of a second object, characterized in that the electrical connection method comprises an adhesive layer arrangement step for arranging a first film-like adhesive layer which is composed of a plurality of conductive particles, a first binder containing the conductive particles, and a first filler on the electrical connection portion said first object (Figure 2, reference 4) and a second film-like adhesive layer which is composed of a second binder and a second filler on said first film-like adhesive layer(Figure 2, reference 7) and a connection step for performing heating and pressurization for electrically connecting the electrical connection portion of said first object and the electrical connection portion of said second object by means of conductive particles of said first film-like adhesive layer (column 10, lines 1-28).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Omoya et al (5,641,996).

13. Omoya et al discloses the pressurization heating steps (column 10, lines 1-28)(claim 13), a temperature range for low viscosity (column 2, lines 66-67 thru column 3, lines 1-14) (claims 13, 14, and 15).

However, Omoya does not disclose the specified temperature and temperature range of these claims.

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It would have been obvious, at the time the invention was made, to one with ordinary skill in the art, to modify the temperature from *80 degrees Celsius to 20 degrees Celsius* since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the "optimum range" involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

### ***Conclusion***

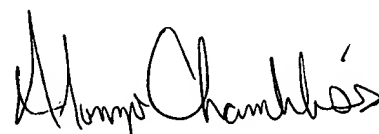
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica D. Harrison whose telephone number is 571-272-1959. The examiner can normally be reached on M-F 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kammie Cuneo can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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AU 2829

mdh  
June 10, 2004

  
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